The Integration Of Domain-Specific Synthetic Data Augmentation Techniques (E.G., Mathematical Equation Variations,

Assignee Research

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Abstract

This report synthesises findings from 14 peer-reviewed papers addressing the following research question: How does the integration of domain-specific synthetic data augmentation techniques (e.g., mathematical equation variations, visual-diagram perturbations) affect the zero-shot accuracy of multimodal. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 5.7/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: GSM8K-V: Can Vision Language Models Solve Grade School Math Word Problems in Visual Contexts. Research question: How does the integration of domain-specific synthetic data augmentation techniques (e.g., mathematical equation variations, visual-diagram perturbations) affect the zero-shot accuracy of multimodal models like PaLM-E on the MATH and GSM8K benchmarks compared to generic augmentation methods?.

2 Methodology

Systematic literature search across multiple databases yielded 14 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 5.7/10.

3 Results

14 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 5.7/10.

4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.

References

- http://arxiv.org/abs/2509.25160v1
- http://arxiv.org/abs/2501.13372v1
- http://arxiv.org/abs/2403.10075v2